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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/334,193	06/16/1999	DENNIS J. O'SHAUGHNESSY	1375P1	5063

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PPG INDUSTRIES INC
INTELLECTUAL PROPERTY DEPT
ONE PPG PLACE
PITTSBURGH, PA 15272

EXAMINER

MCNEIL, JENNIFER C

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 01/02/2003

20

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/334,193		Applicant(s) O'SHAUGHNESSY, DENNIS J.	
Examiner Jennifer McNeil		Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34,36-38 and 40-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20,44 and 45 is/are allowed.
- 6) ☒ Claim(s) 21-34,36-38 and 40-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>15,18</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 28, 2002 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-34, 36-38, and 41-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 recites the limitation "the glass piece" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 22, last two lines, states "the first film of the layer is the silicon, metal or the metal oxy material". What is "the silicon" referring to? Does this refer to all the layers mentioned that contain silicon?

Claim 23, lines 29-30 state "the oxy material are or oxides". This phrase is confusing and appears to be incomplete.

Claim 26 has an alternative grouping that is unclear. Lines 15-17 of claim 26 state "from the group consisting of zinc oxide film; zinc oxide, tin oxide film; a first zinc stannate film and a second dielectric film overlying the first dielectric film". Does the alternative-grouping end with "first zinc stannate film"? Claim 29 has a similar phrase in lines 20-22.

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Claim 26, in the last two lines, states, “where the oxy materials are from oxides or oxynitrides”. Should this be --selected from--or selected from the group consisting of--?

Claim 28 recites the limitation “first dielectric film of the second dielectric layer” in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 36 recites the limitation “the first dielectric layer” in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Claim 36 has an improper and confusing alternative grouping in lines 14-18. The claim states “at least two film selected from metal containing and/or silicon-containing films selected from: metal and /or silicon and metal-oxy and or silicon oxy-materials”. It is entirely unclear what the choices are for the two films. Are the films selected from the group consisting of metal films, silicon-containing films, metal oxy films, and silicon oxy-materials? Please clarify.

Claim 41, lines 2-4, refers to “at least two films selected from the groups consisting of metal and silicon; or selected from metal oxy material and silicon oxy material”. This alternative grouping is confusing and improper. What are the choices for the two films? Are they to be selected from a metal layer or a silicon layer, or are they to be selected from a metal oxy material or a silicon material? Or, are they to be chosen from all four? Please clarify.

Claim 42 refers to a thickness for “the oxy material film”. Is “oxy material” referring to all of the oxy-material films, including the silicon-oxy, oxy-nitride, and metal-oxy? The same applies to claim 43.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 36 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Finley (US 5,059,295). Finley teaches a multiple-layer coated article with layers in the following order and beginning with a glass substrate: a dielectric layer of mixed tin and zinc oxides, a layer of metal, a layer of silver, another layer of metal, and a layer of mixed tin and zinc oxides, and finally a layer of titanium oxide. This embodiment has a substrate, at least one dielectric layer (the first mixed oxide layer), and the protective coating may be considered the final layering of the two oxide films, the mixed tin and zinc oxide, and the last layer of titanium oxide.

Regarding claim 40, the protective layer may also be considered the first layer of metal (which may be zirconium) with a thickness of 12-30 angstroms (col. 4, lines 50-60; col. 7, lines 16-20).

Claims 36 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Apfel et al (US 3,682,528). Apfel teaches an infra-red filter with a substrate of glass (11), a first layer of NiCr (16), a silver layer (17), a dielectric layer (19), another NiCr layer (18), a second silver layer (21), and a second dielectric layer (22). The thickness of the NiCr layers is 5-20 angstroms (col. 2, lines 63-67). Effectively this embodiment is a substrate, a metal protective layer (16), a dielectric layer (19), and at least one silver layer (21) over the first dielectric layer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finley (US 5,059,295) in view of Arbab et al (EP 0803481A2). Finley teaches the low emissivity window stack as discussed above, but do not include additional dielectric and IR reflective layer. Arbab et al teach high

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transmittance, low emissivity coated articles and include multiple dielectric and IR layers in the stack, referred to as double stacks. This results in an article with an improved shelf-life. As it is shown by Arbab that stacks having multiple dielectric and IR reflective layers are well known in the art and provide the benefit of improved shelf-life, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide Finley with additional layers to provide an article with improved shelf-life. Regarding claim 40, with an embodiment of multiple dielectric and silver layers intervening, the final layers of Finley taught as Ti/ZnSnO/TiO₂, would serve as a protective layer.

Allowable Subject Matter

Claims 1-20, 44, and 45 are allowed.

Claims 21-34, 42, and 43 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Response to Arguments

Applicant's arguments filed August 28, 2002 have been fully considered but they are not persuasive. Applicant has amended to overcome previous 112(2) indefinite rejections. However, not all of the changes made overcame the rejections of record. The rejections are noted above.

Regarding claim 36, applicant amended to include a thickness with reference to the metal layers. Since there are two choices for what may constitute the protective layer, Finley is considered to read upon this claim. Finley teaches a final coating of two films of metal oxides, which read on the second choice for the protective coating. Furthermore, Finley teaches that the metal coating has the thickness that is now claimed by applicant. Applicant argues that Finley does not teach that these layers serve as a protective layer. These layers are commensurate in composition and thicknesses with that taught by applicant, and are fully expected to serve the same function of protection of the underlying layers.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer McNeil whose telephone number is 703-305-0553. The examiner can normally be reached on Monday through Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 703-308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



JCM
December 30, 2002

Jennifer McNeil
Examiner
Art Unit 1775